



Office of City Auditor Memorandum

Date: May 22, 2003

To: Sean McDonald, Director, Solid Waste Operations Division
Seattle Public Utilities

From: Scottie Nix, Assistant City Auditor

Subject: **Improving SPU Solid Waste Operations' Control Of Assets**

As you requested, I reviewed your unit's asset control system. This memorandum summarizes our discussions about that system. Our office is pleased with your statement that SPU will take action on all the recommendations we have presented in this memorandum.

I want to thank you for the invitation to perform this work and for the excellent cooperation I received from Solid Waste Operations employees during my work.

Conclusions

The Solid Waste Operations Division can improve the internal controls over its assets. Specifically, it could improve its controls for the purchase, storage, use, and disposal of assets. To achieve these improvements, Solid Waste Operations should adopt more effective asset monitoring practices and increase its commitment to proactive maintenance.

As we discussed during our meetings, Solid Waste Operations should:

1. Make better use of its asset management system, which is based on the Defective Equipment Repair Request (DERR) form.
2. Ensure adequate segregation of duties for personnel with purchasing authority.
3. Use commercial cards instead of direct vouchers for purchasing.
4. Conduct an inventory and track future usage of current assets.
5. Increase scheduled preventive maintenance activities.
6. Provide training to managers and staff in asset protection and use.
7. Conduct further analysis of certain maintenance and repair issues.

Findings and Recommendations

1. The asset management system could be used more effectively.

The current asset management system is based on the Defective Equipment Repair Request (DERR) form, which is currently used to report and track repairs and maintenance of all equipment at Solid Waste Operations. The system can work well; however, we have identified the following opportunities for improvement in the design and use of the system:

- (1) **The asset management system does not generate monthly activity reports for managers, supervisors, and staff to use for planning their work.** For example, you and your managers should have information about the overall budget status, volume, cost and projections for repairs and maintenance. The Crew Chief should receive a report that provides him with the maintenance schedule for all equipment, facilities, and grounds. He should also be given a report that summarizes the maintenance and repair work performed every month in these areas and the budget implications of his work.

For example, such a reporting system would have highlighted the \$40,000 maintenance expenditure for EG0013 Cat loader 963 in 2002. As shown in the table below, this expenditure was twice as much as the maintenance expense on the next most costly loader, which was acquired only two years later. Solid Waste Operations management should have received a report that would have alerted them to this steep increase in maintenance costs.

EQUIP ID	CATEGORY	BNAME	PURCHASE YEAR	Total 2002 Cost
EG0008	HEAVY EQUIPMENT	CAT 963	2002	\$2,322.91
EG0006	HEAVY EQUIPMENT	CAT 963 Loader	1994	\$7,133.57
EG0002	HEAVY EQUIPMENT	CAT 963 LOADER	1999	\$19,180.77
EG0013	HEAVY EQUIPMENT	CAT 963B LOADER	1997	\$41,402.30

We recommend that Solid Waste Operations management develop monthly reports from the asset management system that will allow them to better manage their assets program.

- (2) **The asset management system is not used to track the use of supplies and is not linked to a supply tracking system.** For example, the asset management system could be used to track the fuel consumption of trucks and items such as tools if employees noted such usage on DERR forms. Fuel, tools, and other supplies represent the costs of the assets and should be monitored. **We recommend that supplies usage and fuel consumption be recorded by the asset management system.**

- (3) **There is no policy or training that tells Solid Waste Operations employees how to complete the DERR form.** As a result, employees provide inconsistent information on the forms, which decreases the data's accuracy and usefulness for management decisions such as maintenance and budget allocations. For example, some employees round the time they report while others do not, and some add a percentage to their time for stock charges. There is also no current guidance provided on the method for documenting the price for parts (e.g., should sales tax be included?). All staff should consistently complete the form using standard terms for tasks completed and work performed. **We recommend training be developed and provided that clearly explains the correct method of DERR completion.**
- (4) **Vehicle users do not always complete a DERR slip to notify maintenance staff of needed repairs.** Consequently, maintenance staff may not perform work on a minor problem before it becomes something more serious. Vehicle users should use the DERR slip to notify maintenance about vehicle problems. **We recommend that Solid Waste management provide training to maintenance staff and vehicle users about how to use the DERR form to report potential items needing repair.**
- (5) **The database is not complete.** We observed piles of DERR forms that have not been entered into the system. In addition, there are no established deadlines for input of DERR forms. The current backlog of DERR forms should be processed and future accumulation of forms waiting for input should be prevented. **We recommend that Solid Waste Operations establish a policy that all DERRs be entered into the system within five days of the end of the month that they were created.**
- (6) **There is no current check on the accuracy of the database or an ability to detect potential fraud.** At the present time, Solid Waste Operations managers can never be sure all DERR forms have been accounted for, or that all transactions are valid and authorized. **We recommend that Solid Waste Operations develop a method to quickly and accurately inventory and track all DERR forms and reconcile them on a monthly basis.**
- (7) **The data entered into the system is not verified.** Currently the data is entered by one person, but is not checked for accuracy by another employee. The data entered into the system must have a high degree of consistency and accuracy because the reports generated by the system will be the basis for many important management and staff decisions. **We recommend that Solid Waste Operations develop a process to ensure that data entered into the asset management system is double checked for reasonableness and accuracy.**
- (8) **DERR forms are not filed consistently.** Filing requirements for the four-part form are somewhat complicated and are not routinely followed by Solid Waste Operations employees. Proper routing is as follows: the white (original) sheet should go to the repair personnel/vendor, the yellow sheet should go to data entry/file, the pink sheet should be submitted to the supervisor, and the gold sheet should be placed on defective equipment. In addition, the pink sheet should be filed numerically and the yellow filed by month entered.

We recommend that management develop a written policy and provide training to staff on the proper use and distribution of DERR forms.

- (9) **Disposal and surplus practices are not consistently applied throughout the unit.** Best asset management practices dictate that proper disposal and surplus procedures be followed. It is important that these practices be clearly articulated so that employees are clear on how to follow them and understand the consequences of non-compliance.

We recommend Solid Waste Operations management develop training for all its personnel in the proper policies and practices for the surplus and disposal of supplies and equipment. In addition, Solid Waste Operations should develop a system for handling items that were purchased as part of one unit but are removed while they are new or are in still usable condition (e.g., replacing a newly purchased truck's seats with special ergonomic seats).

- (10) **The asset management system is not fully utilized for cost/benefit analysis.** Information generated by the asset management system could be used to determine the costs and benefits of certain Solid Waste Operations activities. For example, the reports could provide information that could be used to conduct a cost/benefit analysis of having repairs performed in-house versus out of house, and whether to continue to repair the AMFAB versus purchasing a new one. **We recommend that management fully tap the potential of the asset management system to conduct cost/benefit analysis.**

2. Increased segregation of duties is needed.

Certain duties and responsibilities should be divided or segregated among employees with purchasing authority in the maintenance unit in order to reduce the risk of error or fraud. Simply put, no one individual should control all key aspects of a transaction or event. Currently the duties within the maintenance unit are not appropriately segregated.

For example, the Maintenance Crew Chief is expected to perform non-compatible tasks such as:

- Ordering, approving, receiving and recording on the DERR forms the transactions that will be entered into the DERR system;
- Determining which DERRs to process, which leads to the risk that some DERRs would not be forwarded in a timely manner for entry into the asset management system;
- Determining which DERRs can be left open, which leads to the risk that they could be lost;
- Making adjustments to DERR records. For example, using DERRs that have already been entered into the asset management system and assigning additional parts and labor, which could lead to the risk that these additions are not entered in to the system and do not receive supervisory approval; and
- Without any supervisory review, determining which vendors to use.

The following table shows that the Maintenance Crew Chief had sole responsibility for over \$300,000 in repair work awarded to vendors in 2002.

VENDOR	Total Labor Costs	Total Parts Costs	Total Other Costs	Total Costs
Valley Freightliner, Inc.	\$83,105.72	\$29,158.87	\$7,615.77	\$119,880.35
NC Power	\$62,952.22	\$22,925.27	\$8,053.24	\$93,930.73
Recycle Systems	\$15,458.14	\$9,566.04	\$117.37	\$25,141.55
Western Peterbilt	\$9,907.40	\$12,714.55	\$887.73	\$23,509.68
KW	\$11,131.97	\$10,236.45	\$854.81	\$22,223.23
Puget Sound Mobile Trailer Repair, Inc.	\$16,424.50	\$3,381.16	\$9.96	\$19,815.62
Pacific North	\$12,398.58	\$3,442.73	\$26.68	\$15,867.99
Western Power	\$3,819.85	\$1,970.66	\$1,040.49	\$6,831.01
May Valley Auto Glass	\$179.19	\$1,576.27	\$0.00	\$1,755.46
Windtech	\$727.62	\$0.00	\$0.00	\$727.62
Modern	\$216.01	\$0.00	\$77.00	\$293.00
2002 Total	\$216,321.20	\$94,972.01	\$18,683.05	\$329,976.26

Solid Waste Operations management should ensure adequate segregation of duties occurs over parts and labor procurement and use in the following areas:

- Ordering,
- Receiving,
- Issuance,
- Deleting orders and receipts,
- Re-opening work orders to add or remove costs or quantities,
- Adjusting inventory quantities and costs,
- Exercising control over vendor selection, and
- Supervisory approval.

3. Improved purchasing controls are needed.

SPU Solid Waste staff use several methods for purchasing items (City Commercial-card, Direct Voucher (DV), etc.). Direct voucher purchases do not automatically generate detailed information about the parts ordered. A majority of direct voucher orders are made for parts that cannot be recorded or reconciled to the DERR system because all Solid Waste Operations personnel currently utilize the same DV number. As a result, it is difficult for maintenance staff to know whether a received part has been attributed to the correct equipment or DERR slip. In addition, vendors do not currently include the DERR number on invoices submitted to Solid Waste Operations.

We recommend that SPU Solid Waste Operations use only commercial cards for purchasing parts. All Solid Waste Operations maintenance staff should receive commercial cards and be trained in their use. It is important to train staff to put the DERR number on the commercial card

documentation (preferably the item receipt) so that those purchases can be entered by SPU into the asset management system by DERR number. To the extent possible, parts, supplies, and labor should be either ordered through SPU's Support Services group, or purchased by commercial card with the DERR noted on the receipt. Vendors also need to be trained to use the DERR number when they submit an invoice to SPU Solid Waste. Any invoices submitted for payment without a DERR number payment should be denied by SPU.

4. Solid Waste Operations should develop an ongoing inventory of supplies and equipment, and create and maintain greater control over employee access to assets.

Currently there is no complete, accurate inventory of Solid Waste Operations' supplies. This makes it difficult for the Division to maintain control over its assets. Additionally, too many employees have physical access to parts and supplies in the maintenance office, increasing the risk of potential misuse or loss.

We recommend that the Solid Waste Operations Division conduct an inventory of supplies and equipment as soon as possible, and at regular intervals thereafter. To the extent practicable, physical controls should be implemented to limit access to parts and supplies only to those who need them.

According to the Director of the Solid Waste Operations Support Services his division will perform the inventory in return for Solid Waste Operations' regular use of Support Services' procurement services.

If Solid Waste Operations performs the inventory, it should establish procedures and provide training in the inventory process, including:

- Providing written instructions for how to conduct an inventory, control inventory sheets, and establish and follow an inventory cut-off process;
- Identifying who should conduct the inventory (at least one person on each team should be independent of the custodian);
- Identifying who should observe the inventory; and
- Recording and documenting the differences between the physical counts and perpetual inventory records.

5. Scheduled, preventive maintenance is needed.

Scheduled preventive maintenance is essential to ensuring that equipment meets or exceeds its expected service life, and performs effectively and efficiently.

Solid Waste Operations should move to a system for ensuring proactive, scheduled maintenance. Specifically, we recommend the following:

- Solid Waste Operations should improve communications between its maintenance staff and the truck/machinery operators. One way to do this would be to have maintenance staff and

drivers/operators hold weekly or monthly meetings to discuss the state of their equipment and review service records to plan the next month's repair and maintenance activities.

- Solid Waste Operations personnel should receive training on how to care for the equipment that they are using and how to report any malfunctions to the proper personnel in a documented (using the DERR form), timely manner.

6. Provide training on asset protection and use.

Through our discussions with Solid Waste Operations managers and staff, we learned that they do not have a shared, clear understanding of acceptable practices regarding equipment treatment and maintenance. We also learned that training has not been provided to Solid Waste Operations disposal personnel on the laws, rules, and policies regulating disposal and recycling practices.

We recommend that Solid Waste Operations management develop and provide training classes in these two areas so that all employees are aware of behavioral expectations.

Management should continue to communicate and reinforce its expectation that all employees, from the top down, model the behavior and follow the guidelines provided during the training classes. Employees should be encouraged to identify suspected improper activity without fear of repercussion, and disciplinary actions taken as a result of violations found should be widely communicated so others know the expected consequences for similar actions.

7. Further analysis of the maintenance and repair program is needed

Solid Waste Operations should consider various options for improving the efficiency and effectiveness of its maintenance program. Vacancies in two mechanic positions have forced Solid Waste Operations to use contractors to perform maintenance and repair work on its equipment.

Before filling these vacancies, we recommend that Solid Waste Operations conduct cost/benefit analyses to determine whether it should:

- Fill the vacant mechanics positions recognizing that Solid Waste Operations may need to build work spaces in which the mechanics could work; or
- Continue to use contractors to perform maintenance and repair work.

SN/tlb

cc: Councilmember Margaret Pageler, Seattle City Council
Councilmember Jan Drago, Seattle City Council
Andrew Lofton, Mayor's Office
Chuck Clarke, Seattle Public Utilities
Scott Haskins, Seattle Public Utilities
Liz Kelly, Seattle Public Utilities